Urban health educators’ perspectives and practices regarding school nutrition education policies

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Abstract

Although nutrition-related health education policies exist at national, state and local levels, the degree to which those policies affect the everyday practices of health education teachers who are charged with executing them in schools is often unclear. The purpose of this study was to examine the nutrition-related health education policy matrix that affected one urban school district, the health education teachers’ awareness of those policies, the impact of nutrition policies on teachers’ instruction and challenges teachers perceived in executing comprehensive nutrition education. The study used interpretive ethnography to examine the educational contexts and perspectives of 27 health educators from 24 middle schools in one urban district in the Midwestern United States. Data were collected through school observations, interviews with key personnel and document collection. We found that a network of nutrition-related education policies governed health education teachers’ instruction, but that teachers were uniformly unaware of those policies. Without institutional coherence and clear directives, health education teachers taught little nutrition content, primarily due to poor training, professional development, instructional resources and administrative accountability. The results are discussed in light of the enormous challenges in many urban schools and the need for nutrition education professional development.

Introduction

The last several decades have seen a tremendous rise in youth obesity, which is particularly troubling given the connection between obesity and a host of chronic diseases and other negative outcomes. To reverse this growing trend, health professionals are increasingly focusing on improving youth nutrition behaviors [1, 2]. Schools are seen by many, including the Centers for Disease Control and Prevention (CDCP) [3] and the US Surgeon General [4], as important areas for nutrition interventions because youth spend significant time there during their younger formative years and nutrition education is consistent with the educational mission of schools. In fact, a host of interventions have taken place within schools aimed at improving youth health, most notably nutrition interventions focused on factors such as school lunches, school-wide policies, vending choices and nutrition education in classrooms. Many of these interventions have yielded strong improvements in a host of nutrition-related variables (e.g. knowledge, eating behaviors, efficacy) [5–15]. Some studies have even connected improved nutrition with increased academic performance [12, 13]. Indicators of strong, efficacious interventions include: intense and long duration [16]; clear goals and expectations [9]; committed, experienced and well-trained teachers [1]; tailoring of interventions to the target population [2] and theory-driven programs [11, 17, 18].
Presently, a complex matrix of nutrition-related policy mandates has been issued to improve children’s nutrition, especially within the school environment. In the United States, policy mandates and initiatives have occurred at many levels from the federal government [e.g. legislation such as Child Nutrition and Women, Infants and Children (WIC) Reauthorization Act of 2004, US Surgeon General’s vision for healthy and fit nation or the CDCP’s development of the National Health Education Standards], to national health associations (e.g. position statements by the American Association for Health Education, American Cancer Society, American Diabetes Association, American Lung Association), to state departments of education (e.g. state health education standards, benchmarks, grade level expectations and graduation requirements) and state departments of community/public health and to local school districts (e.g. wellness policies, district curricula and coordinated school health teams). It seems logical that the consistent messages supported and reinforced by these various layers of nutrition-related policy ought to have significant influences on what happens in the day-to-day nutrition education practices of K-12 public schools.

Recent evidence, however, has found that widespread improvements in nutrition education in public schools have proceeded slowly. This is in part due to under-funded mandates, insufficient resources, lack of accountability, poor staff development, ineffective monitoring of policy implementation and health education’s marginalized status as a ‘non-core’ school subject [19–22].

Despite this, the picture is not completely bleak as wider policies have sometimes led to fairly substantial changes to local health-related policies and curricular mandates for teachers in areas such as school district wellness policy development (70% of which meet the minimum federal requirements), strengthened nutrition guidelines, elimination or restocking of vending machines or adoption and incorporation of national and state nutrition education standards into official district curricula [19–22].

In a sense, we might view school-based nutrition education policies as requiring a trickle-down effect. Federal, regional, state, local and school district policies and mandates move perpetually closer to the key linchpin of the entire system—the individual schools and classrooms where policies are expected to be enacted according to their intended vision and with fidelity. Clandinin and Connelly [23] use the metaphor of a funnel to describe this process. In many ways, the individual classroom and teacher is the nexus where all levels of policy must come together and be constructed into meaningful educational experiences for the children who the entire system means to shape.

Unfortunately, while many researchers have examined isolated nutrition education interventions and how wider policies (federal and state) influence local school district policies (wellness policies, standards adoption and official curricula), few have examined how nutrition education policies specifically affect the teachers in schools who they are meant to influence. This is a significant gap in the nutrition education literature because we have learned from policy research in other subjects that teachers often publically support wider policies and mandates while privately executing practices in their classrooms much differently or even in opposition [24–27]. In other words, teachers can disrupt the trickle-down effect of broader educational policies through lack of awareness or by ignoring, inaccurately interpreting or subverting them in their instruction with their students. As a result, it becomes imperative to extend policy research to the teacher level and begin to examine how teachers understand nutrition education policies and how they affect their classroom instruction. This imperative becomes infinitely more important in urban settings, as teachers in those environments are faced with many unique challenges, choices and contextual dilemmas [28–31]. By examining how teachers interpret and enact wider nutrition education policies, both the education and policy communities will have a stronger understanding of how to craft effective policies and enact policy-driven systems that can have the strongest possible efficacy in everyday classrooms. In short, there is the potential to identify key ground-level features of policy implementation that can in turn influence the entire process of policy development and trickle-down flow.
Although school-based nutrition policies often include many components of children’s nutrition within the school environment (e.g. vending and school meals), this study was specifically concerned with health education teachers’ perspectives and practices regarding the influences of school nutrition education policies on their curriculum and instruction in formal health education classes. Specific research questions included the following. What nutrition education policies govern urban health education teachers? To what degree are those teachers aware of wider nutrition education policies that ought to affect their work? How do they execute those policies in their instruction? What factors affect their abilities to do so?

Materials and methods

This study employed interpretive ethnographic methodologies [32, 33]. The school district lies in the inner city of a large metropolitan center in the Midwestern United States. At the time, the district educated approximately 110 000 K-12 students, 88% were African American, 6% were Hispanic American and 4% were White, with the remaining 2% not stating ethnicity or small numbers of other ethnicities. The district was located in an economically depressed city with over 70% of students qualifying for free and reduced priced meals.

From 2007 to 2008, 27 health education teachers from 24 middle schools (Grades 6–8) participated in the study. They were recruited through visits to every middle school in the district. The teachers ranged in experience from 1 to 37 years with an average of 18.9 years. Seventeen teachers were males and 10 were females, 16 were African American and 11 were Caucasian. It should be noted that these health educators were also the physical education teachers at their schools and were charged with dividing their time between health and physical education content. The study focused on middle school health education teachers because in this state, the middle school grades are the first level where health education becomes a distinct subject area with clearly defined state department of education policies such as standards and benchmarks for health education and specifically nutrition education.

One researcher conducted data collection using ethnographic methods including non-participant observation, health education teacher and administrator interviews and document collection. First, because it was important to obtain a collective account of teachers’ perspectives and practices across this entire urban district, one researcher visited each health education teacher for two entire school days and observed and recorded fieldnotes regarding their daily instruction and other duties. Second, the researcher conducted both formal and informal interviews with several key groups. Most notably, they formally interviewed the health education teachers for approximately 90 min during each of the two school visits. The interviews took place at a convenient time for the teacher. The interviews were semi-structured and guided by a core set of questions that were asked of all the health education teachers. However, guided by the emergent design of ethnographic research, the interviews often took a more conversational approach as the researcher and teachers discussed teaching situations and individual perspectives. The interview guides contained five types of questions about: teachers’ knowledge of all levels of nutrition education policies, whether and how policies affected their instruction, how they organized and conducted their nutrition education instruction and barriers and facilitators to teaching nutrition in their schools. The interviews were audio-recorded and later transcribed.

In addition, the researcher formally interviewed the school principals to identify their perceptions of nutrition education at their schools as well as mandates and expectations they had for the health education teachers. To add administrative and historical perspective regarding nutrition education policies and expectations in the district, the researcher also interviewed the past and present health education directors and the secondary health education coordinator. They were asked questions from the interview guide, which was revised to elicit the districts’ official perspective.

Third, the researcher collected numerous documents that were pertinent to the focus of the study.
including the district’s wellness policy, the health education curriculum scope and sequence pacing charts, health education teachers’ lesson plans, written policies at each school, in-service education schedules and instructional texts.

The researchers obtained permission to conduct this research from the university Human Investigations Committee (HIC), the school district, building principals and health education teachers. All names are pseudonyms.

Two researchers analyzed the data together using constant comparison and analytic induction following a five-step process after each school visit. First, the data collection researcher transcribed all interviews and fieldnotes. Second, both researchers read the transcripts to gain familiarity with the data. Third, the researchers worked together to code each excerpt of data and place it into a category. For example, all excerpts of data that contained the number of lessons of nutrition the teacher implemented were given an implementation code and were merged into a category with the other similarly coded data from the other teachers. Some of the categories into which the coded data were placed included: awareness of individual nutrition education policies, nutrition education content taught, number of lessons taught, number of courses taken in teaching nutrition during pre-service teacher education, directive from the principal, etc. The process was completed together by the data collection researcher (insider) and independent researcher (outsider) to add credibility. Fourth, each category was written into an interpretation based on the coded data that were assigned to it up to that point. As more data were collected, the interpretation of each category grew in richness and sophistication. Each interpretation included a specific discussion of a finding, followed by the coded data that directly supported it. Similarities and dissimilarities across the teachers were noted and discussed. It was in this step that the researchers sought to identify and explore overarching themes of interpretation that cut across most if not all the teachers in the study. Last, once the researchers had completed this process with every teacher and had developed a set of categories with detailed interpretations, they developed the second interview guide containing two sets of questions: questions seeking new information regarding the research questions of the study and member checking questions asking them to verify, refute, refine or elaborate the interpretations we developed during the first round of fieldwork. A similar data analysis process was implemented following each of the second school.

Several strategies were embedded in the data analysis process to facilitate trustworthiness in the study findings. These included prolonged engagement (studying 24 of 32 middle schools and 27 of 45 middle school health education teachers in the district), member checking, negative case analyses (searching for data that would disconfirm or question the evolving interpretations), use of a researcher journal (to develop evolving interpretations and couple them with data) and use of an independent peer debriefer (outside data analyst).

**Results**

The purpose of this study was to examine how wider nutrition education-related policies influenced the nutrition education practices of health education teachers charged with executing those policies. More specifically, we were interested in the nutrition education policies governing urban health education teachers, the degree to which urban health education teachers are aware of wider health education policies, how they execute those policies in their instruction and factors that affect their abilities to do so.

Generally speaking, we found that school district administrators and official documents (e.g. health education standards, curriculum, resources, wellness policy) were heavily influenced by a host of national and state-level policies regarding nutrition education, but that the health educators were almost uniformly unaware of those policies and the ways they affected the school district or could have affected their work. The result was that most health education teachers assumed that it was primarily their responsibility to provide nutrition education to their middle school students (although there
was for the most part no clear directive) but most integrated virtually no nutrition education content into their health education instruction. The lack of clear instructional mandate by district administrators, which led to little actual classroom nutrition instruction for middle school students, was complicated further by factors such as the teachers’ lack of nutrition education training, unawareness of district nutrition curriculum, unavailability of instruction resources and professional development opportunities and an almost complete lack of supervision and accountability from school principals and district curriculum administrators. Hence, when nutrition education did take place within the health education classroom, albeit infrequently, it occurred haphazardly and with outdated questionable materials.

The results of the study are presented in three themes. These include the nutrition education policy matrix and its influence on the school district, health education teachers’ awareness and interpretation of nutrition education policies and the influences of policies and contextual barriers on curriculum and instruction.

The nutrition education policy matrix and its influences on the school district

In reviewing the school district’s official documents, combined with interviews with the district’s past and present health education director and the secondary health education coordinator, it was determined that two main pieces of federal nutrition policy most heavily influenced the district by way of the state department of education. First, the CDCP’s National Health Education Standards (NHES) are directly cited in the state’s Department of Education Health Education Grade Level Content Standards and Expectations, which, according to the district’s health education director, was adopted verbatim by the district. It should be noted that while the state department of education had developed detailed standards and benchmarks, the state was still without a legislative mandate for health education instruction (e.g. number of minutes per week, lessons per year, etc.). The national standards and subsequent state standards and benchmarks served as the basis for the development of the state’s comprehensive health education curriculum, which the district also adopted. After adoption, the district developed ‘pacing charts’ to prescribe teachers’ implementation of the curriculum, purchased the curriculum resources to create a district-wide ‘lending library’ for teachers to draw from and organized biyearly professional development workshops for teachers. This process can be seen as a steady flow starting with federal policy (i.e. CDCP’s NHES) and progressing to the state Department of Education’s state-level policy (i.e. Health Education Grade Level Content Standards and Expectations), to the state health education curriculum, to the school district’s policy (i.e. official standards, curriculum, pacing charts), resource allotment and training for teachers.

The second federal policy that had direct implications for health education throughout the school district was Section 204 of Public Law 108-265 of the Child Nutrition and WIC Reauthorization Act of 2004. In response to this legislation, the state’s Department of Education and State Board of Education developed the ‘Model Local Wellness Policy’ and mandated that each school district in the state develop a district wellness policy following the state-level model but allowing for modification to reflect local school district policies and procedures. The district then, with the help of administrators, teachers, parents and local agencies, developed their official wellness policies. With respect to nutrition education, this district’s wellness policy states, ‘Nutrition education topics shall be integrated within the sequential, comprehensive health education program taught at every grade level, pre-kindergarten through 12th including center-based transition and before and after-school programs. The nutrition education program shall focus on students’ eating behaviors, be based on theories and methods proven effective by published research and be consistent with the Michigan Health Education Content Standards and Benchmarks.’

It became clear that these two federal policies had an enormous cascading effect on state and local school district policies. It was at this point that the questions guiding the study shifted to understanding how these policies were implemented by
individual schools and teachers throughout the district, more specifically whether teachers were aware of these federal, state and district-level nutrition education policies and how they influenced their instructional practices.

**Teachers’ awareness and interpretation of nutrition education policies**

The health education teachers in this study had a very limited awareness of all federal, state and district policies that could have affected the nutrition education practices in their schools. None of the teachers was aware of either federal legislation (CDCP’s national standards or the WIC Reauthorization Act of 2004). The most common response was ‘I’ve never heard of that.’ (Rex). When asked about the state health education standards, most (24 of 27) knew they existed, but had not read them. Jose said ‘I know the state people rewrote them recently, but I’ve never actually seen them’. Even more (26 of 27) did not realize that the district had adopted them as their official standards. Some teachers (8 of 27) knew the state curriculum existed and offered modules specifically regarding nutrition education; however, only one knew the district had adopted it as its health education curriculum and developed ‘pacing charts’ to prescribe teachers’ implementation of it. Only one teacher was aware of the ‘lending library’ that was available to them to obtain curriculum resources and none could remember professional development offered for the nutrition modules in the health education curriculum.

Similar results were found with respect to the teachers’ knowledge of the school district’s Wellness Policy. Only seven knew it existed, three had read it at some point and one had a copy of it. Ironically, 20 of the 27 teachers were members of their school’s Coordinated School Health Team (CSHT) charged with evaluating school health policies and practices according to the district wellness policy but only three of them had read it during their CSHT duties.

The teachers’ lack of awareness of nutrition-related policies, standards, curriculum, resources and training opportunities seemed to stem from the district’s evolving policy of local school control. According to the past health education director, the district had long ago been renown for its strong central administrative control that exercised accountability over whether schools throughout the district implemented the district’s policies, curricula, resources and participated in regular professional development. However, during the early 1990s, the district enacted a shift toward more local school control led by principals who were charged with executing those accountability duties. The current health education director claimed that at present, individual school principals are charged with identifying personnel within each school who are responsible for executing nutrition-related policies, specifically classroom-based nutrition education. However, when interviewed, all the principals at the middle schools in the study were able to identify only idiosyncratic instances of nutrition education taking place in their schools (e.g. improved breakfasts and lunches, posters in the cafeteria, several school gardens); but only one said they had formally identified and directed a specific teacher within their building to teach health education curricula, specifically nutrition education. In reality, principals claimed that they expected the physical education teachers to teach both physical education and health education but did not directly inform them of this expectation. This was confirmed by the teachers who all but one reported receiving no such directive from their building principals. Perhaps the most interesting finding was that despite not receiving a clear directive from their principals to teach health or nutrition education, 23 of the 27 teachers claimed that they considered themselves health and physical education teachers, who were simultaneously responsible for teaching mostly physical education curriculum but also health education. In the end, what seemed to occur was that principals were entrusted by the district with local school control and latitude to identify individuals within their schools who were responsible for executing the wider district policies and curricula. However, with respect to health and nutrition education, this rarely happened as explicitly as might have been expected. Instead, the physical education teachers at these
schools interpreted no clear directive to teach health or nutrition education but implicitly conceptualized these duties as part and parcel with their roles as self-identified health and physical education teachers. It seemed a curious, unspoken and vulnerable link in the chain connecting federal, state, school district nutrition-related policies, standards and curricula with the implementation in individual schools and classrooms by frontline teachers.

**Influences of policies and contextual barriers on curriculum and instruction**

The link between federal, state and school district policies, standards and curricula proved to be the most vulnerable during implementation. At these middle schools, students on average attended a combined health and physical education class everyday for one 9-week marking period each year. During that time, 23 of the 27 teachers believed that it was their responsibility to teach health and physical education content. The remaining four teachers assumed their duties were to teach physical education only, even though their principals claimed the teachers’ were dually health and physical educators. Two of them said they believed there was a specific resource-room teacher responsible for health education and the other two claimed that no one was teaching it at their schools. Of the 23 teachers who believed it was their responsibility to teach health education, they on average taught 0.83 lessons of nutrition content (whether partial or full lessons) across each 9-week marking period (11 taught no lessons, 9 taught 1 lesson, 2 taught 2 lessons and 1 taught 6 lessons). Based on the teachers’ reports, the average middle school student in this urban district was taught fewer than three lessons of nutrition education over their middle school years. It should be noted that the district curriculum called for six full lessons of nutrition education at seventh and eighth grades and the district wellness policy called for ‘sequential comprehensive nutrition education programs taught at every grade level’.

When asked why they taught so few nutrition education lessons, the health education teachers cited four distinct reasons including their limited initial teacher training, lack of professional development, poor resources and little accountability from their principals or district supervisors. First, 21 of the 27 teachers claimed that they felt unprepared to teach nutrition education, which led them to feel uncomfortable and hesitant teaching it in their classes. Eleven teachers had taken no teacher preparation courses in nutrition and the remaining 16 had taken only one course. Ellen, a teacher who had not taken a single course in nutrition during her teacher training, said ‘I didn’t even learn how to teach nutrition in college. This is very foreign to me’. Complicating things further, for the teachers who did have a course in nutrition education, many had taken it 20 or more years ago. Nina said ‘That class was so long ago, I can’t even remember what we did. It has no bearing on my teaching now’.

Second, the health education teachers reported that their lack of initial training in nutrition was compounded by a scarcity of nutrition-related professional development. The assistant health director for the district reported that she was unaware of nutrition education professional development that had taken place in the district over the last decade. Due to budget shortfalls and financial turmoil, the district had all but canceled the majority of its professional development opportunities for teachers outside of ‘core’ subjects and state-level mandated areas like sex education. In triangulating this finding, no teacher in this study reported participating in or being aware of nutrition-related professional development.

Third, along with poor initial training and absent professional development, the health education teachers cited a lack of up-to-date resources as another significant factor leading them to avoid teaching nutrition. Although the secondary health education coordinator for the district explained the existence of the health education ‘lending library’, only one teacher knew it existed. Most teachers used dated textbooks (most of them that were observed were circa 1993 or older), Internet resources, old handouts (most had clearly been typed on a typewriter), no student workbooks or no resources at all. Only one teacher used the district curriculum because she had participated in a special project.
several years prior. The most common nutrition taught by the health education teachers centered on the USDA food pyramid, but only five teachers had the updated MyPyramid [34].

Last, the health education teachers admitted that a lack of oversight and accountability by the building principals and district curriculum directors contributed to the ease with which they neglected nutrition instruction in their health and physical education classes. Twenty-four of the 27 teachers plainly stated that their principals had ‘no idea’ what they taught in their classes. They argued that their principals’ attention was so firmly focused on school safety and instruction in the ‘core’ academic subjects and that ‘specials’ as the teachers called health, physical education, music and art had become irrelevant for many principals. Beth said ‘Who can blame them, they get a 2-year contract and their job is on the line. If they don’t improve MEAP scores [the statewide content exams in core subject areas], they’re gone. They don’t care what we do’. Only two teachers reported having to write lesson plans for their instruction, and only one teacher said their principals reviewed them. Many of the most seasoned teachers recalled years prior when district health and physical education administrators often supervised their teaching and had power to hold teachers accountable for their performance. However, all the teachers agreed that they had not been visited by a district content administrator in years, and if they had come recently, it was at the request of the teacher to intercede on their behalf with the building principal.

Together, these various forces converged to create a context at most of this city’s middle schools where classroom-based nutrition education rarely occurred. Unspoken directives from the school principals regarding who should teach nutrition education, insufficient initial preparation, a lack of professional development, few up-to-date instructional resources and a laissez-faire culture of supervision and accountability put these already stressed urban health education teachers in a comfortable mindset to simply forego nutrition education. As Jorge put it ‘If nobody’s watching, I’m going to do what I do best, what I feel most comfortable with. Sorry, some things don’t get taught … I’m sorry about that, but that’s reality’.

**Discussion**

Although this study uncovered a significant gap in the presumed funnel [22] from federal, to state, to local, to school district and to individual schools and classrooms with respect to nutrition education, it must be interpreted with caution. Urban schools face enormous challenges in providing ideal educational experiences [32, 33]. Some of the challenges facing this district included: significant student exodus from the district (40% in the last decade); dramatic reductions in per-pupil state funding; corresponding budget shortfalls resulting in reductions in central administration staff and shifts to local school control; incredible transience among school principals, teachers and students throughout the district; little parental involvement; near constant political pressure to increase standardized test scores; corruption across the city and district; difficulty keeping instructional resources safe and returned by students; difficulty attracting and retaining the most highly qualified and energetic teachers and teachers’ reports of more pressing health education concerns beyond nutrition education (e.g. violence prevention, sex education, etc.) [29]. As a result, interpreting the findings of this study must be done both cautiously and in relation to the many other contextual features of urban schools.

It is an easy slide into looking for a place to locate blame when systems of education and health policy falter in circumstances such as this. Some might emphasize the responsibility of the central administration in not providing oversight of principals and teachers, not organizing more abundant professional development or not supplying adequate instructional resources. Others might focus on the role of principals and ask why they failed to provide clear directives to and more intense supervision over their health education teachers to ensure they followed the district’s instructional pacing charts and sought out necessary professional development. Still others might locate fault with the teachers themselves and suggest that as part of their
professional duties they ought to know federal, state and local district policies and curriculum that affect their employment; seek out additional training in areas in which they are knowingly deficient and generally have more professional zest for such a dire area of youth health.

All this, however, would mean ignoring the contextual realities in which each individual must navigate amid the complexities of inner city schools. For example, because of massive budget shortfalls, the administrator overseeing health education across the district was also charged with overseeing six areas (e.g. 21st century grants, Housing and Urban Development Revitalization zone grants, school safety, physical education, health education, athletics, after-school programs), amid a loss of central administration control to individual schools, increasingly vocal teachers’ unions resisting forms of teacher accountability (e.g. executing official district curricula) and the absence of funds for professional development for programs other than those immediately relevant to the state standardized test scores. Practically, this administrator’s role amounts to little control in managing too many marginalized areas with too few resources. A similar picture can be drawn for school principals. They are offered short-term contracts with their retention depending on decreased school violence and more so on improvements to core subject test scores. Although many principals supported educating the ‘whole-child’, in reality they felt forced to focus their depleted resources and attention on areas that higher level administrators, politicians, media and the public cared most about. In a sense, many are caught between their private beliefs about what is best for their students and the pressures being placed on them by the countless outside stakeholders with whom their continued employment rests. Similarly, teachers live in equally complicated spaces. Many have no budgets for instructional resources [37]. They must make incredibly difficult decisions about which physical education and health education content they will and would not include in the typical 9-week term [29]. They are offered little professional development, except the occasional workshops focused on ways they can help facilitate students’ achievement in core subjects. They feel marginalized within their schools as non-core teachers, coupled with a perceived lack of administrator support [31]. Last, they educate children with many behavioral and life-circumstance challenges that prevent an efficient and sustained focus on as comprehensive of a focus to health education as they might like [29, 30]. In the end, the dilemma of nutrition education in these urban schools remains inextricably complicated.

As a result, we quickly find that the logic of top-down nutrition education policies and the pursuit of answers to questions such as which curricula and instructional practices lead to the greatest improvements in students’ dietary patterns, knowledge about healthy eating and efficacy toward eating well (all of which are the hallmarks of typical interventionist projects) are nested in various organizational dynamics (e.g. individuals, outside stakeholders, policy mandates, working culture, resource availability and distribution, values and beliefs of teachers, accountability structures) that exist within schools. While the prospects of using schools as one component in broader public health efforts to reduce youth obesity may seem attractive, this study and others [16, 19, 20, 22, 25] show that creating public health policy with an intended cascade effect closer and closer to individual classrooms becomes subject to the contextual realities endemic to the organizational structures and cultures of those very schools.

This is not to suggest that schools have no role to play in childhood obesity prevention. Rather, those efforts must seek to understand and work inside the complexities of school systems. For example, some more macro-level efforts might start with understanding the culture of school districts’ central administration by taking into account how decisions are made, how resources are allotted, how personnel duties are assigned, the autonomy of individual schools, the influence of teachers’ unions and many others. Then, those efforts might seek to work with district-level administrators to developcost-effective and resource-sensitive strategies such as mandating the involvement of health teachers on policy committees, forcing those committees to tie
individual school efforts back to state and district wellness policies, partnering with area universities to develop collaborative professional development or teacher mentoring partnerships and requiring that the continuing education credits that teachers must take to maintain state-level certification be relevant to weaknesses in their expertise. Similar efforts can be made to understand the organizational culture of principals and teachers themselves, so that low-cost high-efficiency programs can be developed that both target important public health outcomes but do so in grass roots, culturally competent ways [38]. Also, nutrition education content could be better spread throughout the school environment where, for example, food service staff promote healthy eating education in the lunchrooms and classroom teachers integrate inter-disciplinary curriculum that merges nutrition education with classroom subjects such as social studies, math, reading and science.

**Conclusion**

Aside from these larger more macro-level strategies, this study makes clear that at least six key elements of professional development ought to be provided to health education teachers for nutrition education to succeed. First, health educators must be given instruction in the larger nutrition education policy framework guides their work, specifically how federal, state and local nutrition education policies coalesce into the official health and curricular policies of their district. Without that bigger picture, health teachers can fail to appreciate the meaning, grounding and relevance of their work. Second, health educators need to be educated in their district’s official curricula. This district had clearly defined nutrition education curricula and pacing charts they expected teachers to follow, but almost none of the health educators knew they existed. Third, many health educators clearly require content instruction in nutrition concepts and nutrition education for students. Research has found that when teachers have sufficient training, they feel far more confident in teaching nutrition and influencing students’ nutrition behaviors [39, 40]; however, the teachers in this study often reported little if any initial teacher education training in nutrition education or professional development. Plainly said if we expect health educators to include more nutrition education, they must have the requisite knowledge to feel competent and capable in doing it. Fourth, health educators require sufficient resources to implement the nutrition education they learn through professional development. Sufficient resources have both emotional and pedagogical influences on the professional development process [41], and these teachers reported woefully inadequate resources and little wherewithal to find and secure them. Fifth, professional development must help overburdened teachers such as these learn how to negotiate balancing providing both comprehensive physical education and health education (much less nutrition education) in condensed instructional windows such as semesters and 9-week marking periods. The reality is that there is far too much content in physical education alone, much less when combining it with health education, for a middle school teacher to reasonably cover in one 9-week marking period or even one semester. Teachers require clear instruction regarding their district’s priorities and realistic roadmaps for implementing limited content within reasonable time frames. If teachers are given too much content to implement in too little of a time frame, they are simply going to make value judgments about which content is most worthwhile or rely on their areas of expertise or feelings of instructional competence, all of which risks the marginalization of nutrition education as witness in this study. Last, when district authority is decentralized and instructional delegation (i.e. who ought to teach nutrition education in their building) is left to individual school principals, part of the professional development process must include having principals explicitly identify the degree to which their health educators are responsible for nutrition education. After all, providing comprehensive professional development along the lines described above seems irrational if it is not also accompanied by clear mandates for implementation by the teachers’ administrators. In addition, for health education mandates to flourish and take root,
accountability mechanisms are required [20], which suggests that beyond mandates for implementation, administrators must provide oversight to ensure that health educators not only participate in nutrition education professional development, but that they in fact implement their district’s curriculum framework with fidelity. In the end, perhaps the most important message emanating from this study is that more attention needs to be paid to how public health policy, such as nutrition education, is translated and ultimately enacted in everyday classrooms amid very complex organizational dynamics, especially those in urban and inner city areas with such extreme challenges.

**Conflict of interest statement**

None declared.

**References**


